

Listing of Claims

1. (original): A transmitter having programmable transmission parameters temporally aligned with a payload signal, said transmitter comprising:

an upstream module for receiving an input signal from a signal source, generating a processed signal from said input signal, and mingling said programmable transmission parameters with said processed signal to form a compound signal;

an intra-transmitter signal transporter having an input coupled to said upstream module and configured to transport said compound signal to an output of said intra-transmitter signal transporter; and

a downstream module having an input coupled to said intra-transmitter signal transporter output, said downstream module being configured to extract said programmable transmission parameters from said compound signal to recover said processed signal and to convert said processed signal into a communication signal configured in accordance with said programmable transmission parameters.

2. (original): A transmitter as claimed in claim 1 wherein:

said upstream module is one of a plurality of upstream modules each of which couples to said intra-transmitter signal transporter;

said downstream module is one of a plurality of downstream modules each of which couples to said intra-transmitter signal transporter; and

said compound signal is one of a plurality of compound signals transported by said intra-transmitter signal transporter.

3. (original): A transmitter as claimed in claim 2 wherein said intra-transmitter signal transporter is a bus operated in

accordance with a bus protocol that causes said compound signals to be transported thereon after experiencing varying delays.

4. (original): A transmitter as claimed in claim 1 wherein said downstream module generates said communication signal by modulating a carrier signal, said carrier signal exhibiting a frequency specified by said programmable transmission parameters.

5. (original): A transmitter as claimed in claim 1 wherein said downstream module generates said communication signal by modulating a carrier signal which is keyed as specified by said programmable transmission parameters.

6. (original): A transmitter as claimed in claim 1 wherein:

 said input signal is a digital data stream;

 said upstream module is a digital communication modulator which modulates said input signal in accordance with a phase constellation to produce said processed signal in a digital form; and

 said downstream module includes a digital-to-analog converter for converting said processed signal so that said communication signal exhibits an analog form.

7. (original): A transmitter as claimed in claim 6 wherein:

 said digital communication modulator applies first modulation functions at a first point in time on said input signal to generate said processed signal, said first modulation functions being defined by a first set of programming;

 said digital communication modulator additionally applies second modulation functions at a second point in time on said input signal to generate said processed signal, said second

modulation functions being defined by a second set of programming; and

a transport delay imposed by said digital communication modulator in generating said processed signal from said input signal under said first set of programming differs from a transport delay imposed in generating said processed signal from said input signal under said second set of programming.

8. (original): A transmitter as claimed in claim 1 wherein:

said upstream module comprises a connector through which said compound signal passes to said intra-transmitter signal transporter;

said downstream module comprises a connector through which said compound signal passes from said intra-transmitter signal transporter; and

said downstream module is replaceable independently from said upstream module.

9. (original): A transmitter as claimed in claim 1 wherein:

said downstream module converts said processed signal into said communication signal in response to a clock signal; and

said transmitter additionally comprises a first-in-first-out memory buffer configured to synchronize said compound signal to said clock signal.

10. (original): A transmitter as claimed in claim 1 wherein:

said downstream module upconverts said processed signal so that said communication signal is a radio frequency (RF) signal; and

said downstream module comprises an RF power amplifier coupled to an antenna, said RF power amplifier and said antenna

being configured to wirelessly broadcast said communication signal.

11. (original): In a communication system in which a transmitter transmits a communication signal to one or more receivers in accordance with one or more communication protocols, a method of forming said communication signal in response to programmable transmitter parameters that are temporally aligned with payload information, said method comprising:

generating a processed signal from an input signal which conveys said payload information;

mingling said programmable transmission parameters with said processed signal to form a compound signal;

transporting said compound signal from an upstream module to a downstream module;

extracting said programmable transmission parameters from said compound signal in said downstream module to recover said processed signal; and

converting said recovered processed signal into said communication signal, said communication signal being configured in accordance with said programmable transmission parameters.

12. (original): A method as claimed in claim 11 wherein said transporting activity causes said compound signal to experience varying amounts of delay.

13. (original): A method as claimed in claim 11 additionally comprising, prior to said extracting activity, delaying said compound signal in a first-in-first-out (FIFO) memory buffer which imposes varying delays on said compound signal.

14. (original): A method as claimed in claim 11 wherein said converting activity comprises modulating a carrier signal,

said carrier signal exhibiting a frequency specified by said programmable transmission parameters.

15. (original): A method as claimed in claim 11 wherein said converting activity comprises modulating a carrier signal which is keyed as specified by said programmable transmission parameters.

16. (original): A method as claimed in claim 11 wherein:
said input signal is a digital data stream;
said generating activity is performed by a digital communication modulator which modulates said input signal in accordance with a phase constellation to produce said processed signal in a digital form; and

 said converting activity comprises converting said recovered processed signal so that said communication signal exhibits an analog form.

17. (original): A method as claimed in claim 16 wherein:
 said digital communication modulator is programmed to apply first modulation functions to said digital data stream and impose a first transport delay on said digital data stream; and
 said method additionally comprises reprogramming said digital communication modulator to apply second modulation functions to said digital data stream and impose a second transport delay on said digital data stream, said second transport delay differing from said first transport delay.

18. (original): A transmitter as claimed in claim 11 wherein said converting activity upconverts said recovered processed signal so that said communication signal is a radio frequency (RF) signal which is wirelessly broadcast to said one or more receivers.

19. (original): A radio frequency (RF) transmitter for use in a communication system in which said RF transmitter transmits first and second communication signals to one or more receivers in accordance with one or more communication protocols, said transmitter comprising:

a first software-programmable upstream module programmed to apply first digital communication modulation functions to a first input signal and to generate a first processed signal which exhibits a first transport delay relative to said first input signal, said first upstream module having a first upstream connector and being configured to mingle first programmable transmission parameters with said first processed signal to form a first compound signal which passes through said first upstream connector; and

a second software-programmable upstream module programmed to apply second digital communication modulation functions to a second input signal and to generate a second processed signal which exhibits a second transport delay relative to said second input signal, said second upstream module having a second upstream connector and being configured to mingle second programmable transmission parameters with said second processed signal to form a second compound signal which passes through said second upstream connector.

20. (original): An RF transmitter as claimed in claim 19 further comprising:

an intra-transmitter signal transporter having a first input coupled to said first connector and a second input coupled to said second connector, said intra-transmitter signal transporter being configured to respectively transport said first and second compound signals to first and second outputs of said intra-transmitter signal transporter, said first and second compound signals being transported with varying amounts of delay;

a first downstream module having a first downstream connector coupled to said first output of said intra-transmitter signal transporter, said first downstream module being configured to extract said first programmable transmission parameters from said first compound signal to recover said first processed signal and to convert said first processed signal into said first communication signal configured in accordance with said first programmable transmission parameters; and

a second downstream module having a second downstream connector coupled to said second output of said intra-transmitter signal transporter, said second downstream module being configured to extract said second programmable transmission parameters from said second compound signal to recover said second processed signal and to convert said second processed signal into said second communication signal configured in accordance with said second programmable transmission parameters.

21. (original): An RF transmitter as claimed in claim 20 wherein:

said first downstream module generates said first communication signal by modulating a first carrier signal, said first carrier signal exhibiting a frequency specified by said first programmable transmission parameters and being keyed as specified by said first programmable transmission parameters; and

said second downstream module generates said second communication signal by modulating a second carrier signal, said second carrier signal exhibiting a frequency specified by said second programmable transmission parameters and being keyed as specified by said second programmable transmission parameters.